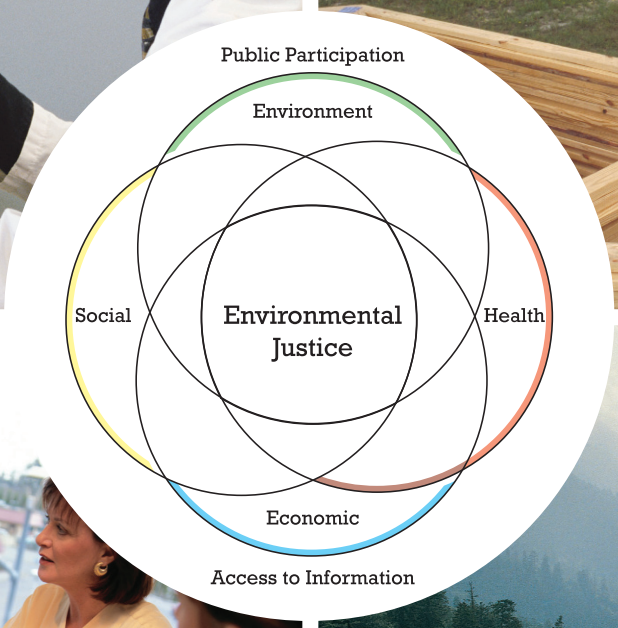
Desk Reference to the Toolkit for Assessing Potential Allegations of Environmental Injustice



DISCLAIMER

This document provides an overview of tools and other reference materials to assist U.S. Environmental Protection Agency (EPA) personnel in assessing and addressing potential allegations of environmental injustice. This desk reference is intended as an overview of the materials presented in the "Toolkit for Assessing Potential Allegations of Environmental Injustice." As such, it should not be considered a substitute for the complete Toolkit.

The Toolkit and the accompanying desk reference are living documents and may be revised periodically without public notice. EPA welcomes public comments on these documents at any time and will consider those comments in any future revision of the Toolkit.

Introduction

The Office of Environmental Justice, in coordination with the EPA Regions and Headquarters Program Offices, developed a comprehensive "Toolkit for Assessing Potential Allegations of Environmental Injustice" (Toolkit) as a conceptual and substantive framework for understanding the Agency's environmental justice program. The Toolkit provides a systematic approach to assess and respond to potential allegations of environmental injustice as they occur, or to prevent injustices from occurring in the first place. The core audience for the Toolkit is the Environmental Justice Coordinators at EPA Headquarters and Regional Offices who are directly involved in environmental justice initiatives and are the front-line in addressing allegations of environmental injustice. The purpose of this desk reference is to present the systematic approach in a format that allows quick and easy reference to the methodology.

Because of the infinitely variable nature of environmental justice problems and stakeholders, as well as the resources available to address any particular situation, neither this document nor the complete Toolkit are intended to mandate an assessment or actions to be taken in each situation. Rather, they are intended to promote a common understanding and provide a flexible framework for assessing and addressing such situations. The decision on whether and how to use the tools and the approach presented in the Toolkit and this desk reference will be made on a case-by-case basis.

Overview of the Methodology

The basic environmental justice assessment methodology consists of the following general phases (also see diagram on page 6):

- Phase 1 - Problem Formulation
- Phase 2 - Data Collection
- Phase 3 - Assessment of the Potential for "Adverse" Environmental and Human Health Effects or Impacts
- Phase 4 - Assessment of Potential for "Disproportionately High and Adverse" Effects or Impacts

The methodology relies on the use of data referred to as "Environmental Justice Indicators." Environmental Justice Indicators are: (1) Environmental Indicators; (2) Health Indicators; (3) Social Indicators; and (4) Economic Indicators. Indicators are

data that highlight some aspect of current conditions and trends in the environment or within a community. They provide information that can be used in an environmental justice assessment to supplement, as appropriate, information more specific to the environmental decision being evaluated (*e.g.*, impacts from a facility being sited or permitted, or potential impacts from a proposed rule) and data required by the statutory authorities that apply to the particular situation. The Toolkit provides more detailed definition of the various types of Environmental Justice Indicators and potential sources of data.

Phase 1: Problem Formulation. Problem formulation establishes the context, management goals, and scope of the entire assessment. It also identifies the participants in the process *(e.g.*, the Assessment Team), the endpoints that are going to be assessed to inform the decision-making process, and which Environmental Justice Indicators (referenced above) will be used to assess those endpoints. The products include a conceptual model of the problem and an analysis plan for the assessment. During this step, an affected area also is identified in at least a general way, as are potential reference communities or statistical sources (*e.g.*, national or state-wide values).

Phase 2: Data Collection. The purpose of this phase is to collect the situation-specific data needed to conduct the analysis of whether the affected area is likely to or is already experiencing disproportionately high and adverse impacts from the situation. In this phase, two types of data are collected:

(1) *Identification of Environmental Sources of Stress and Likelihood of Exposure.* Information is collected to determine the sources of environmental pressures or stress in the affected area that are different from or additional to those in the reference community. This includes an assessment of existing or likely future additional pressures or sources of stress and their proximity to the community (compared with the reference community), that may result from a particular decision or activity. Specific types of data to be considered include:

- Sources of stressors placed on the community
  - Number of environmentally regulated facilities within a community
  - Length of time regulated facilities have operated within a community
  - Number of current and past permit exceedances by regulated facilities
  - Number or extent of non-point sources of pollution
  - Noise levels
- Potential exposure to stressors

– Proximity of regulated facilities to the majority of the community's population
– Proximity to multiple contaminant sources
– Potential or actual cumulative exposure across multiple locations
– Potential or actual exposure to multiple stressors
– Number of biomarkers of exposure that are evident

C Environmental conditions resulting from stressors
– "Quality" of the air, water, and other environmental media
– Density of contaminants in biota (living organisms)

C Environmental vulnerability
– Climate
– Geomorphic features
– Hydrogeomorphic features
– Presence of ecologically sensitive areas

(2) *Collection of Data on Affected Area and Reference Community.* Health-related, social, and economic data on the affected area and on the potential reference communities are collected. This information will be used to compare impacts on the affected area in comparison with the reference community. Generally speaking, the geographic boundaries for a potentially affected area will be defined by the problem (*e.g.*, defining an impact zone around a hazardous waste site or permitted facility) or by the community itself.

C Health Indicators provide information on the general health of the community's residents and their ability to cope with environmental stresses. Specific types of data that would be considered include:

C Existing health conditions
– Percent of infant mortality within the community (per 1000 births)
– Average birth weight
– Adult mortality
– Life expectancy at birth

C Health impacts from environmental stressors
– Number of illnesses attributable to chemical contaminants - if contaminant stressors are in question.
– Number of diseases attributable to pathogens - if pathogenic stressors are in question.

- Social Indicators include data on the distribution of certain population characteristics (*e.g.*, race, color, or ethnicity). Specific types of data that would be considered include:

  - General demographics
    – Percent of population (that have various ethnic and national origins)
    – Population density, including the distribution of urban and rural populations
    – Percent of the population that is Native American
    – Distribution of languages spoken in population
    – Percent of the population that is literate in English or other languages

  - Vulnerability to exposure
    – Percent of community with access to public transportation and services
    – Percent of community with access to health care facilities
    – Percent of community that uses regulated (cigarettes, alcohol) and unregulated (drugs) substances
    – Percent of community with access to alternative sources of drinking water
    – Percent of community with sewage treatment
    – Percent of community that relies on local food sources

  - Government response actions
    – Expenditure/investment on providing access to environmental information (as a percent of total community budget)
    – Expenditure/investment on environmental education and training (as a percent of total community budget)
    – Number and frequency of public meetings on proposed actions and policy decisions
    – Number of different types of materials distributed
    – Percent of households that received distributed materials
    – Number of documents available in the various languages associated with a community

  - Community participation
    – Community identification
    – Cultural dynamics
    – Quality of public participation of community residents

– Number of community residents participating in non-governmental organizations
– Number of community members participating in the decisionmaking process

C Economic Indicators reveal trends about the community's economic well-being. Specific types of data that would be considered include:

  C Economic information
    – Unemployment rate
    – Income level and distribution
    – Percent of homeowners in a community or the percent of renters in a community
    – Percent of community residents with employment in pollution-generating industrial facilities or services
    – Number of brownfields in the community
    – Reliance on natural resources for the community's economic base (as a percent of total community budget)

Phase 3: Assessment of Potential for "Adverse" Environmental and Human Health Effects or Impacts. In this phase, the Assessment Team uses the information collected above to determine whether the proposed actions or existing situation, either alone or in combination with other sources of stress in the environment, might cause adverse impacts in the affected areas. This analysis consists of two activities:

C *Assessment of Potential for "Adverse" Environmental Impacts.* For environmental impacts, this analysis may involve using analytical tools to assess the transport and fate of contaminants in the environment. The endpoints of the assessment include environmental conditions for which EPA has established numerical criteria, such as air and water quality, contaminant concentrations in soils and drinking water, and ambient concentrations of toxic substances outdoors and indoors. The endpoints might also include other parameters for which no numerical standards or criteria exist (*e.g.*, traffic) that need to be evaluated for both the community of concern and the reference community.

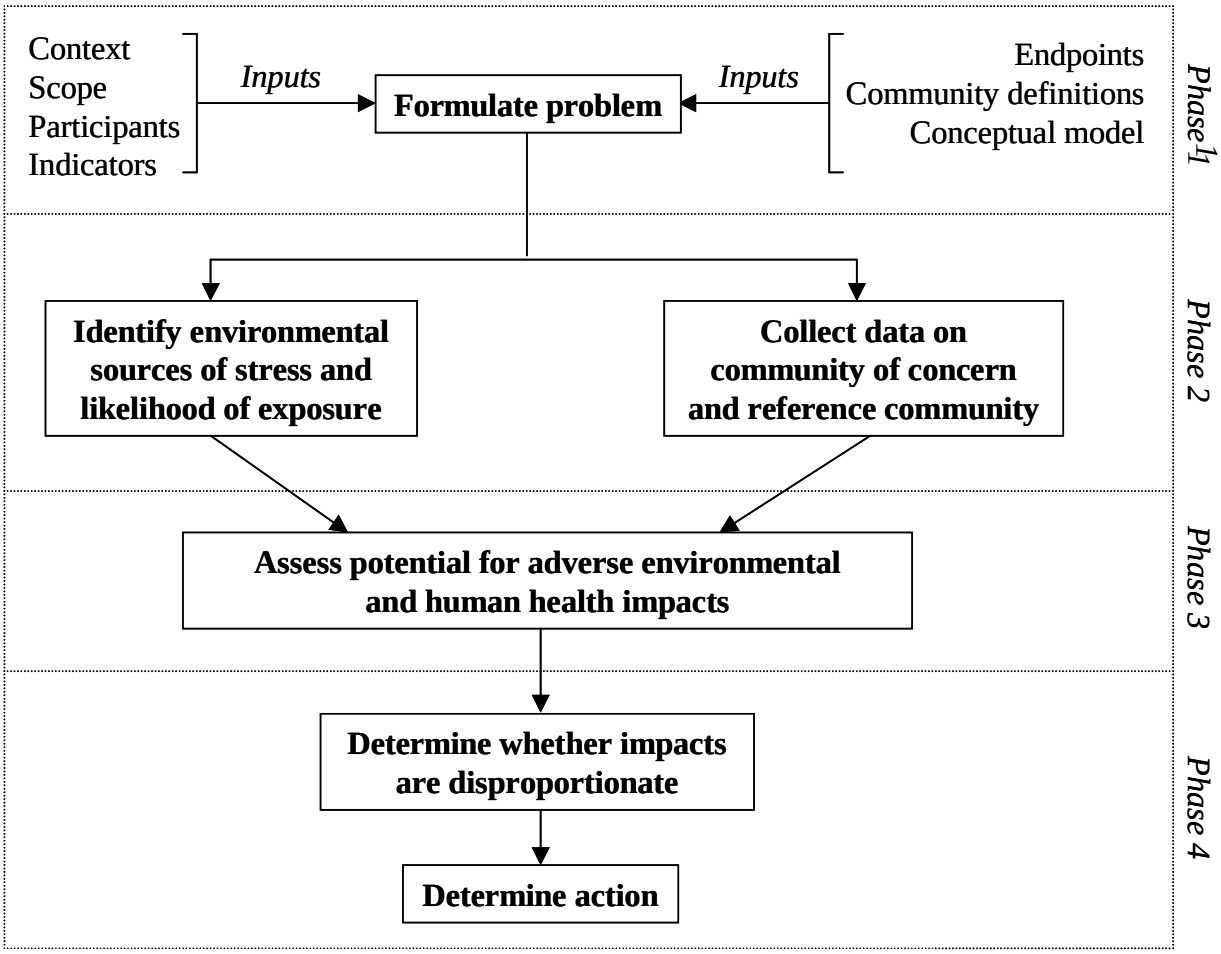
C *Assessment of the Potential for "Adverse" Human Health Impacts*. This can involve the analytic tools used for human exposure and toxicity assessment and

risk characterization. The affected area might be stressed directly by some of the sources identified above or indirectly via changes in or contamination of the environment in which they live and work. This analysis includes two components. The first is estimating the likelihood that the proposed actions or existing sources under evaluation would cause adverse effects on human health. The second is assessing the existing health conditions in the affected area that might result from all sources of stress, including behavioral choices. Compromised health due to poor diet or abuse of substances can make individuals more sensitive to the stressors under investigation. Again, information should be collected for both the affected area and the reference community.

Phase 4: Assessment of Potential for "Disproportionately High and Adverse" Effects or Impacts. The final question to determine the extent of an environmental justice situation is whether the potential for adverse effects on the environment or human health is *disproportionately high* in the affected area compared with the reference community. This involves a comparison of the likelihood, magnitude, and severity of potential effects in the affected area with the likelihood, magnitude, and severity of potential effects in the reference population(s).

Historically, environmental justice concerns have focused on populations considered to be minority and/or low-income. However, since environmental justice is defined as the fair treatment and meaningful involvement of all people, this characterization would not necessarily cause an assessment to be considered "closed" if the population was not considered to be a minority or low-income area. The final decision should be, rather, whether the affected area is likely to or is already impacted by greater adverse effects than the reference community. In many cases, a community that is predominately low-income and/or minority may have the characteristics that will increase its vulnerability or sensitivity to environmental impacts. However, to the extent possible, the actual Health Indicators and other data should be collected to demonstrate how these conditions contribute to greater adverse impacts, rather than relying on just demographic data. Furthermore, some demographic and other social data will be useful in determining how to address the situation (*e.g.*, to increase public participation).

Methodology for Assessing Potential Allegations of Environmental Injustice



Use of the Methodology

Use of the specific components of this methodology is intended to be flexible. This methodology may be conducted in conjunction with, or as a supplement to, the programmatic analysis that occurs within existing environmental programs (*e.g.*, RCRA permitting process). In the absence of a specific decisionmaking process (*e.g.*, in response to an allegation from a community), the methodology may be implemented independently.

Furthermore, each situation may differ in the order in which the data collection components are addressed (*e.g.*, collecting information on the affected area prior to assessing the environmental impacts), the quality and quantity of data used, the level of effort expended, and in many cases, the greater certainty with respect to the conclusions that can be reached. However, it is important that appropriate data collection be completed before making a determination as to whether an environmental injustice situation is occurring or likely to occur. In particular, a situation should not be excluded from further consideration based solely on demographics (*i.e.*, if a community does not appear to be significantly lower in income or higher in minorities than the comparison community) – since the goal of environmental justice is to ensure equal protection for *all* populations. The defining issue is, rather, whether a particular community is likely to suffer from disproportionately greater environmental impacts, regardless of its demographics.

The methodology is intended to be used in a tiered approach to ensure that the process is cost-effective and that subsequent efforts can be focused on situations requiring greater attention from EPA. For example, initial results from the first assessment may indicate that the situation is more appropriately handled under the lead of another federal department/agency. The initial tier is referred to as "The Screening-Level Assessment," while the subsequent (or additional) tier is called "The Refined Assessment."

The Screening-Level Assessment consists of the basic methodology and begins with readily available information. The purpose of the Screening-Level Assessment is two-fold. First, in some cases, it might be possible to demonstrate at the end of the screen that the problem is not a significant environmental justice concern or one in which EPA should take the lead. For example, at this stage of the assessment, the Assessment Team might be able to conclude that a proposed activity or an existing stress is unlikely to cause any adverse effects on the environment (*e.g.*, water quality standards would not be or are not exceeded) or pose risks to human health (*e.g.*, estimated cancer risk less than one in ten million). In addition, the team may conclude that the situation is more appropriately addressed under the lead of another federal, state, or local agency. If this is the case, EPA's environmental justice analysis could stop at the end of the screening analysis. Second, for those cases in which the screen indicates a possible environmental justice concern for which EPA could be of assistance, the screening analysis generally helps to narrow the focus of the more Refined Assessment to those issues that the screen indicated are most important.

If, at the end of the Screening-Level Assessment, the decision is that an environmental injustice situation might exist and that EPA might have a role to play in alleviating the injustice, the EPA decisionmaker could choose to conduct a Refined Assessment. The steps in the Refined Assessment are similar to the steps in the Screening-Level Assessment, but more quantitative data and more certain answers to the questions generally are required.

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